

M.S. in Safety Science

The Master of Science in Safety Science is designed to provide a course of study in aviation safety, preparing students for roles in safety management and technical applications across industries. The program includes coursework related to safety program implementation and regulatory compliance involving agencies such as the EPA, OSHA, FAA, NTSB and state health and workplace standards.

At the **Prescott Campus**, the Master of Science in Safety Science is housed in the College of Aviation. Students complete coursework with access to facilities such as the Robertson Aircraft Accident Investigation Lab, which includes recreations of aircraft accidents using customizable scenarios. Additional resources include the Aviation Safety and Security Archives and the Ergonomics and Motion Measurement Laboratory, which support study of historical safety developments and human factors in workplace safety.

The Master of Science in Safety Science is recognized by the Institute of Hazardous Materials Management (IHMM). Graduates may apply for the Associate Safety and Health Manager (ASHM) credential without an exam requirement, which may support progression toward the Certified Safety and Health Manager (CSHM) certification.

Program-Level Student Learning Outcomes

Students will:

- Apply knowledge of mathematics, science, and applied sciences.
- Analyze data provided from various sources.
- Make positive contributions to function on multi-disciplinary teams.
- Assess professional and ethical responsibility as it applies to industry.
- Effectively communicate using technical writing and verbal communication skills.
- Build the skills required for lifelong learning.
- Explain contemporary issues affecting industry.
- Use techniques, skills, and modern technology necessary for professional practice.
- Assess the national and international environment as it relates to safety science.
- Apply pertinent knowledge to identify and solve problems.
- Apply knowledge of accepted business practices to health and safety issues.
- Apply knowledge of advanced qualitative and quantitative problem-solving skills.

Prescott Program Requirements

Core Requirements	12
Area of Concentration	9
Option	12
Total Credits	33

Program Requirements

The Master of Science in Safety Science program requires successful completion of a minimum of 33 credit hours. The curriculum consists of required core coursework, aviation safety coursework, elective coursework, and a culminating experience through either a Graduate Capstone Course or a master's thesis. Students pursuing this graduate degree must earn a minimum cumulative grade point average (CGPA) of 3.00 for all work completed at the University. The program may typically be completed in 18 to 24 months assuming full-time enrollment. The courses necessary to earn this degree are listed below.

Students should be aware that many courses have prerequisites and/or corequisites. Students are encouraged to work closely with faculty mentors in the development of their research interests and professional

goals. Students are responsible for ensuring that all prerequisite and degree requirements are met prior to enrollment in advanced coursework.

Core Requirements

SFTY 603	Occupational Safety	3
SFTY 604	Quantitative Methods	3
SFTY 612	Research Methods in Safety	3
SFTY 616	Safety Training and Leadership	3
Total Credits		12

Area of Concentration

Aviation Safety

SFTY 531	Aircraft Accident Investigation	3
SFTY 613	Aviation Safety Management Systems	3
SFTY 617	Aviation Human Factors	3
Total Credits		9

Capstone Option (GCP)

SFTY 691	Capstone	3
Choose 3 of the Following:		9
SFTY 540	Disaster Preparedness and Emergency Response	
SFTY 551	Case Studies in Safety	
AVSF 611	Aviation/Aerospace System Safety	
SFTY 614	Safety Ethics	
SFTY 631	Aircraft Accident Analysis	
SFTY 635	Advanced Aircraft Survivability	
SFTY 675	Aviation Maintenance Safety	
Total Credits		12

Thesis Option

SFTY 700	Graduate Thesis	6
Choose 2 of the Following:		6
SFTY 540	Disaster Preparedness and Emergency Response	
SFTY 551	Case Studies in Safety	
AVSF 611	Aviation/Aerospace System Safety	
SFTY 614	Safety Ethics	
SFTY 631	Aircraft Accident Analysis	
SFTY 635	Advanced Aircraft Survivability	
SFTY 675	Aviation Maintenance Safety	
Total Credits		12

Directed Study may be approved by the Department Chair. Students may complete up to 3 credits from an approved internship (COIN 696) toward elective course credit.

Suggested Plans of Study

Capstone Option (GCP)

Year One

Requirements	Credits
SFTY 604 - Quantitative Methods	3
SFTY 612 - Research Methods in Safety	3
SFTY 617 - Aviation Human Factors	3
Semester Hours	9

Requirements	Credits
SFTY 531 - Aircraft Accident Investigation	3

SFTY 603 - Occupational Safety	3
SFTY 616 - Safety Training and Leadership	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Two

Requirements	Credits
SFTY 540 - Disaster Preparedness and Emergency Response	3
SFTY 613 - Aviation Safety Management Systems	3
SFTY 700 - Graduate Thesis	3
Semester Hours	9

Requirements	Credits
SFTY 551 - Case Studies in Safety	3
SFTY 691 - Capstone	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 15

Thesis Option

Year One

Requirements	Credits
SFTY 604 - Quantitative Methods	3
SFTY 612 - Research Methods in Safety	3
SFTY 617 - Aviation Human Factors	3
Semester Hours	9

Requirements	Credits
SFTY 531 - Aircraft Accident Investigation	3
SFTY 603 - Occupational Safety	3
SFTY 616 - Safety Training and Leadership	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Two

Requirements	Credits
SFTY 540 - Disaster Preparedness and Emergency Response	3
SFTY 613 - Aviation Safety Management Systems	3
SFTY 700 - Graduate Thesis	3
Semester Hours	9

Requirements	Credits
SFTY 551 - Case Studies in Safety	3
SFTY 700 - Graduate Thesis	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 15